

Claims:

1. A wear assembly for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear assembly comprising:

a boss having a first surface adapted to be fixed to the digging edge, a second surface adapted to be positioned remote from the digging edge and having a T-shaped structure, and a bearing face extending between said first and second surfaces;

a wear member having at least one rearwardly extending leg and a forwardly projecting working end, said leg having a T-shaped structure releasably coupled to said T-shaped structure of said boss, said leg further including an opening extending therethrough; and

a rigid lock received into said opening, said lock having a first face adapted to oppose and engage said bearing face of said boss and a second face adapted to oppose and engage a wall of said opening whereby said lock secures said wear member to said boss, said lock further including an adjustment assembly selectively movable to vary the relative positions of said first and second faces to eliminate looseness which may exist in mounting said wear member to the digging edge.

2. A wear assembly in accordance with claim 1, in which said opening has a generally T-shaped configuration with a stem portion that extends longitudinally and opens in said rear end and a lateral cross portion which includes said wall to oppose said lock.

3. A wear assembly in accordance with claim 1, in which said lock includes a body and said adjustment assembly includes a threaded bore extending through said body

and a threaded plug operatively received into said bore, wherein said plug includes the first adapted to engage said bearing face of said boss.

4. A wear assembly in accordance with claim 1, in which said lock includes a body and said adjustment assembly includes a bore extending substantially through said body and a piston axially movable in said bore under fluid pressure, wherein said piston includes the first face adapted to engage said bearing face of said boss.

5. A wear assembly in accordance with claim 1, further including a deflector fixed to the digging edge rearward of said boss, said lock member being positionable between said deflector and said wear member to move said adapter forwardly along said boss upon advance of said adjustment assembly.

6. A wear assembly for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear assembly comprising:

a boss having a first surface adapted to be fixed to the digging edge, a second surface adapted to be positioned remote from the digging edge and having a T-shaped structure, and rear and front bearing faces extending between said first and second surfaces;

a wear member comprising a rear mounting end and a forwardly projecting working end, said working end having a longitudinal axis, said mounting end including a leg having a longitudinal axis inclined relative to said longitudinal axis of said working end and adapted to extend rearwardly over the digging edge, said leg having an inner surface adapted to face the digging edge and a T-shaped structure extending longitudinally along said inner surface for coupling to said T-shaped structure of said boss, a bearing face

extending transversely to said T-shaped coupling structure and generally perpendicular to said longitudinal axis of said working end whereby said bearing face abuts said front bearing face of the boss, and a lock receiving opening extending through said leg and in communication with said T-shaped structure of said wear member; and

a lock receiving into said opening to oppose said rear bearing face of said boss and a wall of said opening to thereby secure said wear member to said boss.

7. A wear assembly in accordance with claim 6, in which said working end includes a nose for mounting a point of an excavating tooth.

8. A wear assembly in accordance with claim 7, wherein said nose includes a mounting portion which is enveloped by the point for securing the point to the digging edge, and wherein said bearing face extends in a direction away from said T-shaped coupling structure to a position beyond said mounting portion of said nose.

9. A wear assembly in accordance with claim 6, further including a deflector fixed to the digging edge spaced rearward of said boss such that expansion means is positionable between said deflector and said adapter for moving said adapter forwardly along said boss.

10. A wear member for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear member comprising a rear mounting end and a forwardly projecting working end, said mounting end including a leg adapted to extend rearwardly over the digging edge, said leg having an inner surface adapted to face the digging edge and a T-shaped coupling structure extending longitudinally along said inner surface for coupling to a boss fixed to the digging edge, a

bearing face in communication with said T-shaped coupling structure and extending transversely to said T-shaped coupling structure in a direction generally away from said T-shaped coupling structure to a position beyond said inner surface at least approximately as far as the extension of said working end in the same direction whereby said bearing face is adapted to abut a front end of the boss, and a lock receiving opening extending through said leg in communication with said T-shaped coupling structure, said opening including a pair of longitudinal side walls, one of said side walls including a keeper for releasably retaining a lock.

11. A wear member in accordance with claim 10, in which said working end includes a nose for mounting a point of an excavating tooth.

12. A wear member in accordance with claim 11, in which said nose has a longitudinal axis and said bearing face is substantially perpendicular to said longitudinal axis.

13. A wear member in accordance with claim 12, in which said mounting end includes only a single rearwardly extending leg.

14. A wear member in accordance with claim 10, in which said mounting end includes only a single rearwardly extending leg.

15. A wear member in accordance with claim 10, in which said working end has a longitudinal axis and said bearing face is substantially perpendicular to said longitudinal axis.

16. A wear member in accordance with claim 10, in which said T-shaped coupling structure is a T-shaped slot.

17. A wear member in accordance with claim 10, in which said opening has a generally T-shaped configuration with a stem portion that extends longitudinally and opens in a rear end of said leg and a cross portion which extends laterally a greater distance than the said stem portion.

18. A wear member in accordance with claim 10, in which said other of said pair of opening side walls is arcuated to form a pivot support for the lock.

19. A wear member in accordance with claim 10, in which said keeper includes a tab which overlies a recess in said one side wall.

20. A wear member for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear member comprising a rear mounting end and a forwardly projecting working end having a longitudinal axis, said mounting end including a leg adapted to extend rearwardly over the digging edge, said leg having a longitudinal axis which is inclined relative to said longitudinal axis of said working end, said leg having an inner surface adapted to face the digging edge and a T-shaped coupling structure extending longitudinally along said inner surface for coupling to a boss fixed to the digging edge, a bearing face extending transversely to said T-shaped coupling structure and substantially perpendicular to the longitudinal axis of said working end whereby said bearing face is adapted to abut a front end of the boss, and a lock receiving opening extending through said leg and in communication with said T-shaped coupling structure.

21. A wear member in accordance with claim 20, in which said working end includes a nose for mounting a point of an excavating tooth.

22. A wear member in accordance with claim 21, in which said bearing face extends beyond said nose in a direction away from said T-shaped coupling structure.

23. A wear member in accordance with claim 20, in which said working end is formed by tapering walls having rearward ends proximate said mounting end, and said bearing face extends in a direction away from said T-shaped coupling structure to a position beyond said rearward ends of said tapering walls.

24. A wear member in accordance with claim 20, in which said T-shaped coupling structure is a T-shaped slot.

25. A wear member in accordance with claim 20, in which said opening includes a pair of longitudinal walls, wherein one of said walls includes a keeper for releasably retaining a latch of a lock.

26. A wear member for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear member comprising a rear mounting end and a forwardly projecting working end, said mounting end including at least one leg adapted to extend rearwardly over the digging edge, said leg having an outer surface, an inner surface and a rear end wall, said inner surface being adapted to face said digging edge and having a T-shaped coupling structure for coupling to a boss fixed to the digging edge, and a lock receiving opening extending through said leg, said opening having a generally T-shaped configuration with a longitudinal stem portion opening in said rear end wall and a cross portion extending laterally beyond said stem portion.

27. A wear member in accordance with claim 26, in which said working end includes a nose for mounting a point of an excavating tooth.

28. A wear member in accordance with claim 26, in which said T-shaped coupling structure is a T-shaped slot.

29. A wear member in accordance with claim 26, in which one of said side walls of said opening includes a keeper for releasably retaining a latch of a lock.

30. A wear member in accordance with claim 29, in which said other of said pair of side walls of said opening is arcuated to form a pivot support for the lock.

31. A wear member in accordance with claim 29, in which said keeper includes a tab which overlies a recess in said one side wall.

32. A wear member in accordance with claim 26, in which said mounting end includes only a single rearwardly extending leg.

33. A wear member in accordance with claim 26, in which said mounting end includes a pair of rearwardly extending legs spaced apart to receive therebetween the digging edge.

34. A boss for attaching a wear member to a digging edge of an excavator, the digging edge having an inside face and an outside face, said boss comprising a first surface adapted to be fixed to the digging edge, and a second surface adapted to be positioned remote from the digging edge, said second surface having a longitudinally extending T-shaped coupling structure, said first surface having a clamping section adapted to wrap around the digging edge and engage front portions of the inside face and the outside face, and a front bearing face and a rear bearing face each extending between said first surface and said second surface.

35. A boss in accordance with claim 34, wherein said T-shaped coupling structure

includes a body extending generally perpendicular to the digging edge and a lateral flange, and wherein said clamping section extends laterally beyond said body.

36. A boss in accordance with claim 35, in which said clamping section extends laterally beyond said flange.

37. A boss in accordance with claim 34, in which said front and rear bearing faces are generally planar.

38. A boss in accordance with claim 34, which further includes an opening extending from said first surface to said second surface to enable welding of said boss to the digging edge.

39. A boss in accordance with claim 34, in which said first surface includes a front segment and a rear segment, wherein said front segment extends at an inclination to said rear segment to engage a beveled ramp on the inside face of the digging edge.

40. A boss for attaching a wear member to a digging edge of an excavator, the digging edge having an inside face, an outside face and a beveled ramp, said boss comprising a first surface adapted to be fixed to the digging edge and a second surface adapted to be positioned remote from the digging edge, said first surface having a rear segment and a front segment inclined relative to one another, said front segment being adapted to be fixed to the beveled ramp of the digging edge, said second surface having a longitudinally extending T-shaped coupling structure, and a front bearing surface and a rear bearing face each extending between said first surface and said second surface.

41. A lock member for securing a wear member to a boss wherein the boss is fixed to a digging edge of an excavator, said lock member comprising a block shaped body

having a rigid construction and including front and rear faces and a pair of side faces, one of said side faces including a latch adapted to cooperate with a keeper for retaining said lock member in a opening of the wear member, and an adjustment assembly having an longitudinal axis and extending through said body generally orthogonally to said front and rear faces, said adjustment assembly having a front bearing face that is axially movable to eliminate any looseness existing between the boss and the wear member.

42. A lock member in accordance with claim 41, in which said adjustment assembly includes a threaded bore extending through said body and a threaded plug operatively received into said bore, wherein said plug includes said front bearing face.

43. A lock member in accordance with claim 42, in which said plug further includes a plurality of flats to facilitate turning in said bore.

44. A lock member in accordance with claim 41, in which said adjustment assembly includes a bore extending substantially through said body and a piston axially movable in said bore under fluid pressure, wherein said piston includes said front bearing face.

45. A lock member in accordance with claim 41, in which the other of said side faces includes an arcuated depression which forms a pivot support.

46. A lock member in accordance with claim 41, in which said latch includes a rigid tang projecting outward from said one side face and an elastomeric member resiliently supporting said tang.

47. A method of removing a wear member from a boss fixed to a digging edge of an excavator, said method comprising:

providing a wear assembly including a boss fixed to the digging edge of an excavator, a deflector fixed to the digging edge rearward of said boss, a wear member, and a lock member, said boss and said wear member including complementary T-shaped structures coupled together to releasably hold said wear member to said boss, and said lock member preventing removal of said wear member from said boss when installed;

removing said lock member from wear assembly;

providing an expansive force between said wear member and said deflector to force said wear member forwardly along said T-shaped structure of said boss; and

removing said wear member from said boss.

48. A method in accordance with claim 47, wherein said lock member includes an adjustment assembly which is selectively movable, and wherein said adjustment assembly of said lock member is used to apply said expansive force.

49. A method in accordance with claim 48, wherein said adjustment assembly includes a piston which is advanced under fluid pressure to move said wear member.

50. A method in accordance with claim 48, wherein said adjustment assembly includes a threaded plug which is advanced to move said wear member.

51. A wear assembly for attachment to a digging edge of an excavator comprising:

a wear member having a rearwardly extending leg and a forwardly projecting working end, said leg having a longitudinal slot which opens in an inner side of said leg, said slot having an internal shoulder, and an opening extending through said leg and in communication with said slot, said opening including a bearing face;

a boss adapted to be fixed to the digging edge, said boss including a bearing face and a longitudinal tongue, said tongue being axially received into said slot of said wear member and including a shoulder to engage said internal shoulder of said slot to prevent relative movement between said wear member and said boss in directions other than longitudinal; and

a rigid lock received into said opening and including a first face engaged with said bearing face of said opening, a second face engaged with said bearing face of said boss, and an adjustment assembly selectively movable to vary the relative positions of said first and second faces to eliminate looseness which may exist in mounting said wear member to the digging edge.

52. A wear member for attachment to a boss fixed to a digging edge of an excavator, said wear member comprising a forwardly projecting working end having a longitudinal axis and a rearwardly extending leg inclined relative to the longitudinal axis of said working end, said leg having a longitudinal slot which opens in an inner side of said leg and a lock receiving opening extending through said leg and in communication with said slot, said slot having an internal shoulder and being adapted to receive a complementary tongue of a boss to prevent relative movement therebetween in directions other than longitudinal, said wear member further including a first bearing face in said opening to engage a lock and a second bearing face exposed in said slot to engage the boss, said second bearing face extending transversely to said slot and substantially perpendicular to said longitudinal axis of said working end.

53. A wear member for attachment to a boss fixed to a digging edge of an

excavator, said wear member comprising a forwardly projecting working end and a rearwardly extending leg, said leg having a longitudinal slot which opens in an inner side of said leg and a lock receiving opening extending through said leg and in communication with said slot, said slot having an internal shoulder and being adapted to receive a complementary tongue of a boss to prevent relative movement therebetween in directions other than longitudinal, said wear member further including a first bearing face in said opening adapted to engage a lock and a second bearing face exposed in said slot adapted to engage the boss, said second bearing face being generally transverse to said slot and projecting outward from said slot at least approximately as far as the extension of said working end in the same direction.

54. A wear member for attachment to a boss fixed to a digging edge of an excavator, said wear member comprising a forwardly projecting working end and a rearwardly extending leg having a transverse rear end wall said leg having a longitudinal slot which opens in an inner side of said leg and said rear end wall, and a lock receiving opening extending through said leg and in communication with said slot, said slot having an internal shoulder and being adapted to receive a complementary tongue of a boss to prevent relative movement therebetween in directions other than longitudinal, and said opening being open in said rear end wall including a lateral shoulder in said leg spaced from said rear end wall to define a bearing surface for a lock to secure the wear member to the boss.

55. A wear assembly for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear assembly comprising:

a boss having a mounting surface adapted to be fixed to the digging edge, a T-shaped coupling structure, and a bearing face extending transverse to said mounting surface;

a wear member having at least one rearwardly extending leg and a forwardly projecting working end, said leg having a T-shaped coupling structure releasably coupled to said T-shaped structure of said boss, and an opening extending therethrough; and

a lock received into said opening to hold said wear member to said boss, said lock having a first face adapted to oppose said bearing face of said boss, a second face adapted to oppose a wall of said opening, and an adjustment assembly selectively movable to vary the relative positions of said first and second faces to thereby apply forces to the wear member and the boss that tend to move the wear member so as to tighten the mounting of the wear member on the boss.

56. A wear assembly in accordance with claim 55 in which said opening has a generally T-shaped configuration with a stem portion that extends longitudinally and opens in a rear end of the leg of the wear member, and a lateral cross portion which includes said wall to oppose the lock.

57. A wear assembly in accordance with claim 55 in which the adjustment assembly includes a threaded member which is turned to adjust the relative spacing between the first face and the second face.

58. A wear assembly in accordance with claim 55 in which the wear member includes a keeper structure in the opening, and the lock includes a projection received in the keeper structure to hold the lock in the opening.

59. A wear assembly for attachment to a digging edge of an excavator, the digging edge having an inside face and an outside face, said wear assembly comprising:
a boss having a mounting surface adapted to be fixed to the digging edge, a T-shaped coupling structure, and a bearing face extending laterally to said mounting surface;
a wear member having at least one rearwardly extending leg and a forwardly projecting working end, said leg having a T-shaped coupling structure releasably coupled to said T-shaped structure of said boss, and an opening extending therethrough; and
a lock received into said opening to hold said wear member to said boss, said lock having a first part with a first face adapted to oppose said bearing face of said boss, and a second part with a second face adapted to oppose a wall of said opening, said first part being threadedly connected to said second part for adjustment of said first face relative to said second face to thereby apply forces to the wear member and the boss that tend to move the wear member so as to tighten the mounting of the wear member on the boss.

60. A wear assembly in accordance with claim 59 in which said opening has a generally T-shaped configuration with a stem portion that extends longitudinally and opens in a rear end of the leg of the wear member, and a lateral cross portion which includes said wall to oppose the lock.

61. A wear assembly in accordance with claim 59 in which the wear member includes a keeper structure in the opening, and the lock includes a projection received in the keeper structure to hold the lock in the opening.

62. A mount for attaching a wear member to a digging edge of an excavator, the digging edge having an inside face and an outside face, said mount comprising a rear

structure having a mounting surface adapted to be fixed to the digging edge, a longitudinally extending T-shaped coupling structure adapted to mate with a complementary formation of the wear member, and a rearwardly facing bearing surface adapted to abut a lock and thereby hold the wear member to the mount, and a front structure adapted to wrap around the digging edge and be attached to front portions of the inside face and the outside face, said front structure including at least one surface adapted to abut the wear member and resist unwanted movement of the wear member relative to the mount.

63. A mount in accordance with claim 62 in which the front structure is wider than the mounting surface of the rear surface.

64. A mount in accordance with claim 63 in which the T-shaped coupling structure includes a lateral flange, and the front structure is wider than the lateral flange.

65. A mount in accordance with claim 63 in which said at least one surface of the front structure faces forwardly to abut an inner surface of the wear member.

66. A mount in accordance with claim 63 wherein the rear and front structures are formed as a one-piece member.

67. A lock adapted to be received into an opening in a wear member for securing the wear member to a boss fixed to a digging edge of an excavator, said lock comprising opposite front and rear bearing faces wherein the front face presses against the boss and the rear face presses against the wear member to maintain coupling of the wear member to the boss, an adjustment assembly for selectively varying the relative positions of the front and rear bearing faces, and a projection to cooperate with a keeper structure to hold the

lock in the opening in the wear member.

68. A lock adapted to be received into an opening in a wear member for securing the wear member to a boss fixed to a digging edge of an excavator, said lock comprising opposite front and rear bearing faces wherein the front face is adapted to oppose the boss and the rear face is adapted to oppose the wear member to maintain coupling of the wear member to the boss, an adjustment assembly for selectively varying the relative positions of the front and rear bearing faces, and a projection to cooperate with a keeper structure to hold the lock in the opening in the wear member, wherein the adjustment assembly includes a threaded bore extending through a body and a threaded plug operatively received into the bore, and the plug includes the front bearing face.

69. A lock in accordance with claim 68 in which the body includes an arcuate depression in a side thereof to form a pivot support.

70. A lock adapted to be received into an opening in a wear member for securing the wear member to a boss fixed to a digging edge of an excavator, said lock comprising opposite front and rear bearing faces wherein the front face is adapted to oppose the boss and the rear face is adapted to oppose the wear member to maintain coupling of the wear member to the boss, an adjustment assembly for selectively varying the relative positions of the front and rear bearing faces, and a projection to cooperate with a keeper structure to hold the lock in the opening in the wear member, wherein the projection includes a rigid tang and an elastomeric member resiliently supporting the tang.

71. A method of mounting a wear member to an excavator provided with a boss having a first longitudinal T-shaped coupling member, the wear member having a front

working structure and at least one rearwardly extending leg formed with a second longitudinal T-shaped coupling structure and an opening in communication with the second T-shaped coupling structure, the method comprising:

sliding the wear member rearwardly onto the boss so that the first and second T-shaped coupling structures mate with each other;

inserting a lock with opposite, spaced apart first and second bearing faces into the opening such that the first bearing face opposes a wall of the boss and the second bearing face opposes a wall of the wear member;

selectively adjusting the spacing between the first and second bearing faces to tighten the mounting of the wear member onto the excavator.

72. A method in accordance with claim 71 in which the lock includes a threaded member which includes the first bearing face on one end, wherein the adjusting of the space between the bearing faces is accomplished by turning of the threaded member.

73. A lock adapted to be received into an opening in a wear member for securing the wear member to a boss fixed to a digging edge of an excavator, said lock comprising opposite front and rear bearing faces wherein the front face is adapted to oppose the boss and the rear face is adapted to oppose the wear member to maintain coupling of the wear member to the boss, an adjustment assembly for selectively varying the relative positions of the front and rear bearing faces, and a projection to cooperate with a keeper structure to hold the lock in the opening in the wear member, and further including a first part with an opening and a second part movably received in the opening, wherein one of the front and rear bearing faces are defined on each of the first and second parts.

74. A wear assembly for an excavator having a lip with an inner surface, an outer surface, and a front edge face for digging, the wear assembly comprising:

a boss adapted to be fixed to an excavator lip, the boss including (i) an inner surface to be fixed to the lip, the inner surface having a front portion and a rear portion generally aligned with each other, and being bent so that the front portion extends generally transverse to the rear portion with the rear portion being along one of the faces of the lip and the front portion being along the front edge face, (ii) a first shoulder that extends generally away from the front edge face, the first shoulder having a holding surface that faces generally toward the lip, and (iii) a first bearing surface;

a wear member including (i) a second shoulder that is placed between the holding surface and the lip to hold the wear member and prevent release of the wear member in a direction away from the lip, and (ii) an opening having a second bearing surface; and

a lock received into the opening in the wear member so as to oppose the first and second bearing surfaces to prevent disconnection of the first and second shoulders and thereby retain the wear member to the boss.

75. A wear assembly in accordance with claim 74 in which the boss includes a support surface, and the wear member includes an abutting surface to abut the support surface of the boss to restrict rearward movement of the wear member, wherein the abutting surface and the support surface are each generally transverse to the extension of the first shoulder away from the front edge face.

76. A wear assembly in accordance with claim 75 in which the support surface is arcuate.

77. A wear assembly in accordance with claim 74 in which the boss is a one-piece member.

78. A wear assembly in accordance with claim 74 in which the first bearing surface is formed at a rear end of the boss.

79. A wear assembly in accordance with claim 74 in which the boss has a generally T-shaped coupling structure that includes the first shoulder.

80. A wear assembly in accordance with claim 79 in which the wear member has a generally T-shaped slot that includes the second shoulder, and the T-shaped coupling structure of the boss is received in the slot of the wear member.

81. A wear assembly for an excavator having a lip with a front edge face for digging, the wear assembly comprising:

a boss adapted to be fixed to an excavator lip, the boss including a front structure with an inner surface that is bent and fixed along a face of the lip and the digging edge, a rear structure having a first shoulder that extends generally away from the digging edge, and a bearing surface, wherein the rear structure includes a rearwardly extending leg that substantially overlies the lip, and the front structure wraps around the digging edge to define a second leg;

a wear member including a second shoulder that engages the first shoulder to hold the wear member to the boss and prevent release of the wear member in a direction perpendicular to the extension of the front shoulder, and an opening; and

a lock received into the opening in the wear member and in contact with the bearing surface of the boss to prevent disconnection of the first and second shoulders and thereby

retain the wear member to the boss.

82. A wear assembly in accordance with claim 81 in which the wear member further includes a forwardly extending working portion.

83. A wear assembly in accordance with claim 82 in which the working portion is a nose for holding an excavating point.

84. A wear assembly in accordance with claim 74 further including a keeper to retain the lock in the opening.

85. A wear assembly in accordance with claim 84 in which the lock includes a retention portion movable between an operative position and a release position, wherein the retention portion in the operative position sets opposed to the keeper to retain the lock in opening.

86. A wear assembly in accordance with claim 74 in which the opening in the wear member includes a main portion and a stem portion, wherein the stem portion is narrower than the main portion and each of the main and stem portions extend completely through the wear member.

87. A wear assembly in accordance with claim 86 in which the stem portion opens in a rear surface of the wear member.

88. A wear assembly in accordance with claim 74 in which the lock includes a first face that abuts the bearing surface of the boss, a second face that abuts a wall of the opening in the wear member, and an adjustment assembly that moves the first and second faces relative to each other to tighten the fit to the lock between the wear member and the boss.

89. A wear assembly in accordance with claim 88 in which the lock further includes a main body and a movable plug, wherein one of the first and second faces is defined on each of the body and plug.

90. A wear assembly in accordance with claim 88 in which the adjustment assembly includes a threaded connection.

91. A wear assembly for an excavator having a lip with a front edge face for digging, the wear assembly comprising:

a boss adapted to be fixed to an excavator lip, the boss including a coupling structure having a holding surface in opposed relation to the lip of the excavator, a bearing surface, and a front portion that wraps around the digging edge;

a wear member received over the boss and including retaining members that are received between the holding surfaces and the lip of the excavator to retain the wear member to the boss in directions other than a longitudinal direction, and an opening; and

a lock received into the opening in the wear member and in contact with the bearing surface of the boss to prevent disconnection of the first and second shoulders and thereby retain the wear member to the boss.

92. A wear assembly in accordance with claim 91 in which the front portion of the boss further includes a front bearing surface that abuts the wear member to restrict movement of the wear member.

93. A wear assembly in accordance with claim 92 in which the front bearing surface is arcuate.

94. A wear assembly in accordance with claim 91 in which the boss is a one-piece

member.

95. A wear assembly in accordance with claim 91 in which the holding surfaces are part of a generally T-shaped coupling structure.

96. A wear assembly in accordance with claim 95 in which the wear member has a generally T-shaped slot that receives the T-shaped coupling structure.

97. A wear assembly in accordance with claim 91 in which the wear member includes a keeper to retain the lock in the opening.

98. A wear assembly in accordance with claim 97 in which the lock includes a retention portion movable between an operative position and a release position, and the retention portion in the operative position sets opposed to the keeper to retain the lock in opening.

99. A wear assembly in accordance with claim 91 in which the opening in the wear member includes a main portion and a stem portion, wherein the stem portion is narrower than the main portion.

100. A wear assembly in accordance with claim 91 in which the lock includes a first face that abuts the bearing surface of the boss, a second face that abuts a wall of the opening in the wear member, and an adjustment assembly that moves the first and second faces relative to each other to tighten the fit to the lock between the wear member and the boss.

101. A wear assembly in accordance with claim 100 in which the lock further includes a main body and a movable plug, wherein one of the first and second faces is defined on each of the body and plug.

102. A wear assembly in accordance with claim 101 in which the plug is threadedly received in the main body.

103. A wear assembly for an excavator having a lip with a front edge face for digging, the wear assembly comprising:

a one-piece boss adapted to be fixed to an excavator lip, the boss including a front portion that wraps around the digging edge and forms a forwardly-facing bearing surface, a coupling structure with first shoulders extending away from the front edge face, and a rearwardly-facing bearing surface;

a wear member received over the boss and including a slot that engages with the coupling structure of the boss to permit only relative longitudinal movement between the wear member and the boss, an abutting surface to engage the forwardly-facing bearing face of the boss to limit rearward movement of the wear member relative to the boss, and an opening passing through the wear member; and

a lock received into the opening in the wear member and in contact with the rearwardly-facing bearing surface of the boss and a wall of the opening to prevent disconnection of the engaged slot and coupling structure.

104. A wear assembly in accordance with claim 103 in which the lock includes first and second bearing surfaces and an adjustment assembly selectively movable to vary the relative positions of the first and second bearing surfaces to eliminate looseness which may exist in mounting the wear member to the lip.

105. A wear assembly in accordance with claim 104 wherein the lock includes an adjustable plug that tightens the engaged of the wear member onto the excavator.

106. A wear assembly in accordance with claim 105 wherein the plug is threadedly received into a corresponding bore in the lock.

107. A wear assembly in accordance with claim 103 in which the opening in the wear member includes a main portion and a stem portion, wherein the stem portion is narrower than the main portion and opens in a rear portion of the wear member.

108. A wear member for mounting to an excavator having a lip with an inner face, an outer face, a front edge face and at least one boss fixed to the lip, the wear member comprising:

an inner surface to face the lip;

a longitudinal slot for axially receiving the boss therein, the longitudinal slot having a central portion that opens in the inner surface and being partially defined by holding surfaces extending laterally outward from the central portion, wherein the holding surfaces are generally facing away from the lip for engaging the boss to generally permit only relative longitudinal movement between the wear member and the boss;

an opening passing through the wear member for receiving a lock;

a first bearing surface associated with the opening and facing generally forward to engage the lock and thereby prevent removal for the wear member from the boss; and

a second bearing surface facing generally rearward to engage the boss and restrict rearward movement of the wear member on the boss;

the first and second bearing surfaces each being generally transverse to the longitudinal slot.

109. A wear member in accordance with claim 108 which further includes a

rearwardly extending leg and a front working portion, wherein the second bearing surface is generally between the front working portion and the leg.

110. A wear member in accordance with claim 108 which further includes a keeper cooperating with a lock mechanism for holding the lock in the opening.

111. A one-piece boss to be fixed to an excavator lip having an inner face, an outer face and a front edge face for digging, wherein the boss is for mounting a wear member to the lip, the boss comprising (i) a coupling structure with shoulders extending rearwardly from the front edge face to engage a complementary structure of a wear member, (ii) an inner surface to be fixed to the lip, the inner surface having a front portion and a rear portion generally aligned with each other, and being bent so that the front portion extends generally transverse to the rear portion with the rear portion being along one of the faces of the lip and the front portion being along the front edge face, (iii) a forwardly facing first bearing surface to abut the wear member and resist rearwardly directed forces, and (iv) a rearwardly facing second bearing surface for contacting a lock securing the wear member to the boss, each of the first and second bearing surfaces being generally transverse to the extension of the shoulders extending from the front edge face.

112. A boss in accordance with claim 111 in which the first bearing surface is arcuate.

113. A boss in accordance with claim 111 in which the front portion wraps around the front edge face so that the inner surface extends along the inner and outer surfaces of the lip.

114. A boss for fixing to an excavator lip for mounting a wear member thereto, the

boss including a rear structure adapted to mount along a first side of the lip, the rear structure including a coupling structure with shoulders extending rearwardly from the digging edge to engage complementary structure of a wear member and a rearwardly facing bearing face adapted to engage a lock holding the wear member to the boss, and a front structure adapted to engage an opposite side of the lip and the front of the digging edge, the front structure including at least one bearing surface adapted to abut the wear member and resist unwanted movement of the wear member relative to the boss.

115. A wear assembly for an excavator having a lip with an inner surface, an outer surface and a front edge face for digging, the wear assembly comprising:

a boss to be fixed to an excavator lip, the boss including a first shoulder spaced from the lip and a first bearing surface;

a wear member including a second shoulder that engages the first shoulder between the first shoulder and the lip to hold the wear member to the boss and prevent release of the wear member from the boss in a direction generally perpendicular to the lip, an opening, and a second bearing surface associated with the opening, wherein the first and second bearing surfaces face in opposite directions when the first and second shoulders are engaged; and

a lock received into the opening in the wear member, the lock being substantially contained to one side of the lip and between the first and second bearing surfaces to prevent disconnection of the first and second shoulders from each other and thereby retain the wear member on the boss, the lock having a first lock surface to oppose the first bearing surface, a second lock surface to oppose the second bearing surface, and an adjustment

assembly selectively movable to vary the relative positions of the first and second bearing surfaces to thereby apply forces to the wear member and the boss that tend to tighten the mounting of the wear member on the boss.

116. A wear assembly in accordance with claim 115 wherein the boss includes a front structure that wraps around the front edge face of the lip.

117. A wear assembly in accordance with claim 115 wherein the lock includes a first part with an opening and a second part movably received in the opening, wherein one of the first and second bearing faces are defined on each of the first and second parts.

118. A wear assembly in accordance with claim 115 in which the lock includes a body with one wall that defines the first face and a threaded bore, and a threaded member threaded into the threaded bore, wherein the threaded member includes a wall that defines the second face.

119. A wear assembly for attachment along a lip of an excavator comprising:
a boss fixed to the lip and having a rear wall;
a wear member having (i) a forwardly projecting working end, (ii) a rearwardly extending leg having an inner side adapted to face the lip, a rear wall generally transverse to the inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to receive the boss and thereby provide support to the position of the wear member on the lip, and (iii) a forwardly facing bearing surface; and

a lock placed in general alignment with the slot and maintained to one side of the lip for engagement with the rear wall of the boss and the bearing surface of the wear member to retain the wear member to the lip, the lock including a body having an axial hole

extending generally parallel to the extension of the slot, and an adjustment member movably secured in the axial hole of the body such that axial movement of the adjustment member in the axial hole relative to the body expands the lock so as to press against the rear wall of the boss and the bearing surface of the wear member and thereby move the wear member rearward to thereby tighten the mounting of the wear member on the lip.

120. A wear assembly in accordance with claim 119 in which the body and adjustment member are threadedly coupled together.

121. A wear assembly in accordance with claim 120 in which the adjustment member is moved forwardly relative to the body to push against the boss and thereby tighten the mounting of the wear member on the lip.

122. A wear assembly in accordance with claim 119 in which the body includes a threaded bore and the adjustment member includes a threaded shank extending through the bore, wherein the shank extends generally parallel to the longitudinal slot in the wear member.

123. A wear assembly in accordance with claim 119 in which the body includes a first bearing surface that presses against a wall of the opening and the adjustment member includes a second bearing surface that presses against a wall of the boss.

124. A wear assembly in accordance with claim 119 in which the opening has a front portion and a rear portion, wherein the rear portion is narrower than the front portion and opens in the rear wall of the leg of the wear member, and the front portion includes at least one forwardly-facing bearing surface adjacent the rear portion to engage the lock.

125. A new assembly for attachment along a lip of an excavator comprising:
a boss fixed to the lip and having a front wall;
a wear member including (i) a forwardly projecting working end, (ii) a rearwardly
extending leg having an inner side to face the lip, a rear wall generally transverse to the
inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to
receive the boss and thereby provide support to the position of the wear member on the lip,
(iii) an opening, and (iv) a transverse bearing surface at a front end of the slot extending
generally parallel to the front wall of the boss to abut said front wall; and
a lock removably received into the opening to engage the wear member and the boss
and thereby releasably retain the wear member to the lip.

126. A wear assembly in accordance with claim 125 in which the lock includes a
body and an adjustment member movably secured to the body such that forward
movement of the adjustment member relative to the body moves the wear member
rearward to thereby tighten the mounting of the wear member on the lip.

127. A wear assembly in accordance with claim 126 in which the body and
adjustment member are threadedly coupled together and positioned such that one presses
against the boss and one presses against the wear member.

128. A wear assembly in accordance with claim 125 in which the opening has a
front portion and a rear portion, wherein the rear portion is narrower than the front
portion and opens in the rear wall of the leg of the wear member, and the front portion
includes at least one forwardly-facing bearing surface adjacent the rear portion to engage
the lock.

129. A wear assembly for attachment along a lip of an excavator, the lip defining a front edge face for digging, the wear assembly comprising:

a boss fixed to the lip and having a front portion that wraps around the front edge face of the lip;

a wear member having a forwardly projecting working end, a rearwardly extending leg having an inner side adapted to face the lip, a rear wall generally transverse to the inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to receive the boss and thereby provide support to the position of the wear member on the lip, and an opening extending through the wear member; and

a lock removably received into the opening to releasably retain the wear member to the lip.

130. A wear assembly in accordance with claim 129 in which the boss includes a front wall, and the wear member includes a front bearing surface extending generally parallel to the front wall of the boss for abutting said front wall.

131. A wear assembly in accordance with claim 130 in which the lock includes a body and an adjustment member movably secured to the body such that movement of the adjustment member relative to the body moves the wear member rearward to thereby tighten the mounting of the wear member on the lip.

132. A wear assembly in accordance with claim 131 in which the body and adjustment member are threadedly coupled together.

133. A wear assembly in accordance with claim 132 in which the body includes a threaded bore and the adjustment member is a threaded shank extending through the bore.

134. A wear assembly in accordance with claim 133 in which the body includes a bearing surface that presses against a wall of the opening and the adjustment member includes a bearing surface that presses against a wall of the boss.

135. A wear member for mounting on a front lip of an excavator having a fixed boss, the wear member comprising (i) a forwardly projecting working end, (ii) a rearwardly extending leg having an inner side to face the lip, a rear wall generally transverse to the inner side, and a longitudinal slot open in the inner side and the rear wall of the leg to receive the boss and thereby provide support to the position of the wear member on the lip, the slot including a rearwardly-facing bearing surface at a front end thereof and extending out of the slot for abutting against a front wall of the boss in face-to-face contact for resisting rearwardly directed loading on the wear member during use, and (iii) a lock receiving opening extending through the wear member and having a first forwardly-facing bearing surface extending generally transverse to the lip to contact the lock.

136. A wear member in accordance with claim 135 in which the opening has a front portion and a rear portion, wherein the rear portion is narrower than the front portion and opens in the rear wall of the leg of the wear member, and the front portion includes at least one forwardly-facing bearing surface adjacent the rear portion to engage the lock.

137. A wear member in accordance with claim 135 in which the working end includes a nose for mounting a point of an excavating tooth.

138. A wear assembly in accordance with claim 77 wherein the boss wraps completely around the front edge face of the lip such that the inner surface extends along

the inner and outer surfaces of the lip.

Claim 139 (canceled).